

STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN FLIAS BALDACCI GOVERNOR

March 17, 2006

DAVID P. LITTELL

COMMISSIONER

Mr. David Colter President and Chief Operating Officer **GAC Chemical Corporation** P.O. Box 436 Searsport, Maine 04974

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0001830 Maine Waste Discharge License (WDL) Application #W002530-5S-G-M

Final Permit/License

Dear Mr. Colter:

Enclosed please find a copy of your final MEPDES permit and Maine WDL Modification which was approved by the Department of Environmental Protection. This permit/license for your facility superseded WDL#W002530-5S-F-R issued on December 29, 2004. Please read the permit/license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "Appealing a Commissioner's Licensing Decision."

We would like to make you aware of the fact that your monthly Discharge Monitoring Reports (DMRs) may not reflect the revisions in this permitting action for several months however, you are required to report applicable test results for parameters required by this MEPDES permit/WDL that do not appear on the DMR. Please see attached April 2003 O&M Newsletter article regarding this matter.

If you have any questions regarding the matter, please feel free to call me at 287-7659.

Sincerely,

Bill Hinkel

Division of Water Quality Management Bureau of Land and Water Quality

Enc.

cc:

Tanya Hovell, DEP

Sandy Lao, USEPA File #2530

DMR Lag

When the Department renews discharge permits, the parameter limits may change or parameters may be added or deleted. In some cases, it is merely the replacement of the federally issued NPDES permit with a state-issued MEPDES permit that results in different limits. When the new permit is finalized, a copy of the permit is passed to our data entry staff for coding into EPA's Permits Compliance System (PCS) database. PCS was developed in the 1970's and is not user-friendly. Entering or changing parameters can take weeks or even months.

This can create a lag between the time your new permit becomes effective and the new permit limits appearing on your DMRs. If you are faced with this, it can create three different situations that have to be dealt with in different ways.

- 1. If the parameter was included on previous DMRs, but only the limit was changed, there will be a space for the data. Please go ahead and enter it. When the changes are made to PCS, the program will have the data and compare it to the new limit.
- 2. When a parameter is eliminated from monitoring in your new permit, but there is a delay in changing the DMR, you will have a space on the DMR that needs to be filled. For a parameter that has been eliminated, please enter the space on the DMR for that parameter only with "NODI-9" (No Discharge Indicator Code #9). This code means monitoring is conditional or not required this monitoring period.

3. When your new permit includes parameters for which monitoring was not previously required, and coding has not caught up on the DMRs, there will not be any space on the DMR identified for those parameters. In that case, please fill out an extra sheet of paper with the facility name and permit number, along with all of the information normally required for each parameter (parameter code, data, frequency of analysis, sample type, and number of exceedances). Each data point should be identified as monthly average, weekly average, daily max, etc. and the units of measurement such as mg/L or lb/day. Staple the extra sheet to the DMR so that the extra data stays with the DMR form. Our data entry staff cannot enter the data for the new parameters until the PCS coding catches up. When the PCS coding does catch up, our data entry staff will have the data right at hand to do the entry without having to take the extra time to seek it from your inspector or from you.

EPA is planning significant improvements for the PCS system that will be implemented in the next few years. These improvements should allow us to issue modified permits and DMRs concurrently. Until then we appreciate your assistance and patience in this effort.

Phil Garwood



STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

#W002530-5S-G-M APPROVAL) MODIFICATION AND RENEWAL
#ME0001830) WASTE DISCHARGE LICENSE
SEARSPORT, WALDO COUNTY) AND
CHEMICAL MANUFACTURER) ELIMINATION SYSTEM PERMIT
GAC CHEMICAL CORPORATION) MAINE POLLUTANT DISCHARGE

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, §1251, et seq., and Maine law 38 M.R.S.A., §414-A et seq., and applicable regulations, the Department of Environmental Protection (Department) has considered the application of the GAC CHEMICAL CORPORATION (GAC), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

- a. Application: GAC Chemical Corporation has applied to the Department for modification and renewal of combined Waste Discharge License (WDL) #W002530-5S-F-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0001830, which was issued on December 29, 2004 and is scheduled to expire on December 29, 2009. The 12/29/04 MEPDES permit authorized the monthly average discharge of up to 0.04 million gallons per day (MGD) of water softening system filter backwash wastewater, steam condensate, non-contact cooling water and storm water runoff via Outfall #001A and a monthly average discharge of up to 0.02 MGD of water softening system filter backwash wastewater, neutralized, demineralized water softening system filter backwash wastewater, steam condensate, non-contact cooling water, neutralized boiler blowdown wastewater, and storm water runoff via Outfall #002A to the Atlantic Ocean at Stockton Harbor, Class SB, in Searsport, Maine.
- b. Modification Requested: GAC has requested the Department modify the 12/29/04 permit to consolidate the two point source discharges to a single outfall location. GAC proposes to eliminate the discharge from Outfall #002A by redirecting the wastewater flows to Outfall #001A.

PERMIT SUMMARY

This permitting action is similar to the previous permitting action in that it is:

1. Carrying forward the requirement to maintain a current, written Storm Water Pollution Prevention Plan.

This permitting action is different from the previous permitting action in that it is:

- 1. Eliminating all effluent limitations, special conditions, monitoring requirements and authorization to discharge for Outfall #001A and Outfall #002A;
- 2. Authorizing the consolidation of Outfall #001A and Outfall #002A to a single discharge point designated as Outfall #004A in this permitting action;
- 3. Establishing a monthly average discharge flow limit of 0.124 MGD and a daily maximum discharge flow reporting requirement for Outfall #004A;
- 4. Establishing daily maximum and monthly average concentration limits for total suspended solids (TSS) for Outfall #004A;
- 5. Establishing daily maximum and monthly average concentration and mass limits for ammonia based on the new flow limit associated with Outfall #004A;
- 6. Establishing a daily maximum temperature limit of 85 degrees Fahrenheit for Outfall #004A; and
- 7. Establishing a daily maximum pH range limitation of 6.0 9.0 standard units for Outfall #004A.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet, dated March 17, 2006, and subject to the Conditions listed below, the Department makes the following conclusions:

- 1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
- 2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
- 3. The provisions of the State's antidegradation policy, 38 M.R.S.A. §464(4)(F), will be met, in that:
 - (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
 - (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;
 - (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;
 - (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and
 - (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
- 4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in Maine law, 38 M.R.S.A., §414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted application of the GAC CHEMICAL CORPORATION to discharge a monthly average flow of up to 0.124 MGD of combined water softening system filter backwash wastewater, steam condensate, non-contact cooling water, storm water runoff, neutralized, demineralized water softening system filter backwash wastewater, and neutralized boiler blowdown wastewater to the Atlantic Ocean at Stockton Harbor, Class SB, in Searsport, Maine, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

- 1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.
- 2. The attached Special Conditions, including any effluent limitations and monitoring requirements.
- 3. The expiration date of this permit is five (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 215T DAY OF

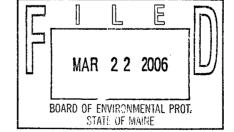
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DAVID P. LITTELL, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: October 18, 2005

Date of application acceptance: October 25, 2005



Date filed with Board of Environmental Protection:

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge wastewater (including storm water runoff) from Outfall #004A to the Atlantic Ocean at Stockton Harbor. Such discharges shall be limited and monitored by the permittee as specified below⁽¹⁾:

	•				INIM	Minimum
Effluent Characteristic	stic	Discha	Discharge Limitations		Monitoring	Monitoring Requirements
	Monthly	Daily	Monthly	Daily	Measurement	Sample
	Average	Maximum	Average	Maximum	Frequency	Type
	as specified	as specified	as specified	as specified	as specified	as specified
Flow	0.124 MGD	Report MGD			5/Week	Measured
[50050]	[03]	[03]		P + -	[05/07]	[WS]
TSS			$50 \mathrm{mg/L}^{(2)}$	100 mg/L	2/Month	Grab
[00530]			[61]	(19)	[02/30]	/GRJ
Ammonia (as N)	20.0 lbs./day	18.9 lbs./day	29.0 mg/L	27.5 mg/L	2/Month	Grab
[61574]	[26]	[26]	[19]	[19]	[02/30]	[GR]
Temperature	i			85^0 F	1/Month	Grab
[1000]				[15]	[01/30]	[GR]
Hd				OS 0.6 - 0.9	3/Day	Grab
[00400]			ľ	[12]	103/011	IGR1

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

FOOTNOTES: See Page 6 of this permit for applicable footnotes.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

- 1. Monitoring All effluent monitoring shall be conducted at a location following the last treatment unit in the treatment process as to be representative of end-of-pipe effluent characteristics. Effluent monitoring shall be conducted at the discharge end of the mixing/contact chamber. Any change in sampling location must be approved by the Department in writing. Sampling and analysis must be conducted in accordance with: a) methods approved by 40 Code of Federal Regulations (CFR) Part 136; b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136; or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services.
- 2. TSS Twelve-Month Rolling Average The monthly average concentration limitation of 50 mg/L for TSS is based on an average over the previous twelve-month period. For the purposes of this permitting action, the twelve-month rolling average calculation is based on the test results for the most recent twelve-month period. For the first eleven months of the term of this permit, the permittee shall report "NODI-9" Monitoring Conditional/Not Required This Monitoring Period, in the applicable space on the Discharge Monitoring Report (DMR). In the "Comments" box at the bottom of the DMR, the permittee shall indicate this is the first, second, third, etc. month of the initial rolling average calculation. In the twelfth month and each month thereafter, the permittee shall calculate and report on the DMR, the 12-month rolling average TSS concentration. See the example calculation in Section 6.e. of the accompanying Fact Sheet. The permittee shall submit all TSS data used in calculating the rolling average with the monthly DMRs.

B. NARRATIVE EFFLUENT LIMITATIONS

- 1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.
- 2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.
- 3. The discharge shall not impart color, taste, turbidity, toxicity, radioactivity or other properties which cause those waters to be unsafe for the designated uses and characteristics ascribed to their classification.
- 4. Notwithstanding specific conditions of this permit, the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

C. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade I Physical/Chemical (P/C) Certificate** (or Maine Registered Professional Engineer) pursuant to Maine law 32 M.R.S.A. §4171 *et seq*. All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

D. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office such that the DMR's are received by the Department on or before the fifteenth (15th) day of the month following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the Department assigned compliance inspector (unless otherwise specified by the Department) at following address:

Department of Environmental Protection
Eastern Maine Regional Office
Bureau of Land and Water Quality
Division of Water Quality Management
104 Hogan Road
Bangor Maine 04401

E. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of any substantial change (increase or decrease) in the volume or character of pollutants being introduced into the wastewater collection and treatment system. For the purposes of this section, notice regarding substantial change shall include information on:

- 1. the quality and quantity of wastewater introduced to the wastewater collection and treatment system; and
- 2. any anticipated impact caused by the change in the quantity or quality of the wastewater to be discharged from the treatment system.

F. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall #004A. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit.

G. OPERATION & MAINTENANCE (O&M) PLAN

The permittee shall maintain a current written comprehensive Operation & Maintenance (O&M) Plan at the facility. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and USEPA personnel upon request.

Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility, the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

H. STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

The permittee shall develop, maintain and periodically update a Storm Water Pollution Prevention Plan (SWPPP) for the facility that is consistent with the SWPPP requirements established in the Department's *Multi-Sector General Permit Maine Pollutant Discharge Elimination System Stormwater Discharge Associated with Industrial Activity*, dated October 11, 2005. As the site or any operations conducted on it have changed or are expected to change materially or substantially, the permittee shall modify its SWPPP as necessary to include such changes and notify the Department within 90 days of such modifications to the plan. The permittee shall maintain a copy of the SWPPP and any subsequent revisions at the terminal and shall make the plan available to any Department or USEPA representative upon request.

The SWPPP requirements are intended to facilitate a process whereby the permittee thoroughly evaluates potential pollution sources at the facility and selects and implements appropriate measures to prevent or control the discharge of pollutants in storm water runoff. The process involves the following four steps: (1) formation of a team of qualified facility personnel who will be responsible for preparing the SWPPP and assisting the appropriate facility staff in its implementation; (2) assessment of potential storm water pollution sources; (3) selection and implementation of appropriate management practices and controls; and (4) periodic evaluation of the effectiveness of the plan to prevent storm water contamination and comply with the terms and conditions of the permit.

I. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time, and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional effluent or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

J. SEVERABILITY

In the event that any provision, or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all respects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT AND WASTE DISCHARGE LICENSE

FACT SHEET

Date: MARCH 17, 2006

MEPDES PERMIT:

#ME0001830

WASTE DISCHARGE LICENSE: #W002530-5S-G-M

NAME AND ADDRESS OF APPLICANT:

GAC CHEMICAL CORPORATION P.O. BOX 436 **SEARSPORT, MAINE 04974**

COUNTY:

WALDO

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

GAC CHEMICAL CORPORATION KIDDER POINT ROAD **SEARSPORT, ME 04974**

RECEIVING WATER / CLASSIFICATION: ATLANTIC OCEAN AT STOCKTON HARBOR/CLASS SB

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: MR. DAVID COLTER, PRESIDENT/COO

(207) 548-2525

1. APPLICTION SUMMARY

- a. Application: GAC Chemical Corporation (GAC) has applied to the Department of Environmental Protection (Department) for modification and renewal of combined Waste Discharge License (WDL) #W002530-5S-F-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0001830, which was issued on December 29, 2004 and scheduled to expire on December 29, 2009. The 12/29/04 MEPDES permit authorized the monthly average discharge of up to 0.04 million gallons per day (MGD) of water softening system filter backwash wastewater, steam condensate, non-contact cooling water and storm water runoff via Outfall #001A and a monthly average discharge of up to 0.02 MGD of water softening system filter backwash wastewater, neutralized, demineralized water softening system filter backwash wastewater, steam condensate, non-contact cooling water, neutralized boiler blowdown wastewater, and storm water runoff via Outfall #002A to the Atlantic Ocean at Stockton Harbor, Class SB, in Searsport, Maine.
- b. Modification Requested: GAC has requested the Department modify the 12/29/04 permit to consolidate the two point source discharges to a single outfall location. GAC proposes to eliminate the discharge from Outfall #002A by redirecting the wastewater and storm water flows to Outfall #001A.

2. PERMIT SUMMARY

- a. <u>Terms and Conditions:</u> This permitting action is similar to the previous permitting action in that it is:
 - 1. Carrying forward the requirement to maintain a current, written Storm Water Pollution Prevention Plan.

This permitting action is different from the previous permitting action in that it is:

- 1. Eliminating all effluent limitations, special conditions, monitoring requirements and authorization to discharge for Outfall #001A and Outfall #002A;
- 2. Authorizing the consolidation of Outfall #001A and Outfall #002A to a single discharge point designated as Outfall #004A in this permitting action;
- 3. Establishing a monthly average discharge flow limit of 0.124 MGD and a daily maximum discharge flow reporting requirement for Outfall #004A;
- 4. Establishing daily maximum and monthly average concentration limits for total suspended solids (TSS) based on the new flow limit associated with Outfall #004A;
- 5. Establishing daily maximum and monthly average concentration and mass limits for ammonia based on the new flow limit associated with Outfall #004A;
- 6. Establishing a daily maximum temperature limit of 85 degrees Fahrenheit for Outfall #004A; and
- 7. Establishing a daily maximum pH range limitation of 6.0 9.0 standard units for Outfall #004A.
- b. <u>Facility History:</u> This section provides a summary of significant licensing/permitting actions and milestones that have been completed for GAC. Additional history information may be found in Fact Sheet Section 2(c) of WDL #W002530-5S-F-R.

March 21, 2003 - GAC revised its existing Spill Prevention Control and Countermeasure Plan.

December 29, 2004 – The Department issued WDL #W002530-5S-F-R /MEPDES Permit #ME0001830 to GAC for the monthly average discharge of up to 0.04 MGD of wastewater via Outfall #001A and up to 0.02 MGD of wastewater via Outfall #002A to the Atlantic Ocean at Stockton Harbor.

October 18, 2005 – GAC submitted a General Application to the Department for the modification and renewal of WDL #W002530-5S-F-R. The application was accepted for processing on October 25, 2005 and was assigned WDL #W002530-5S-G-M / MEPDES #ME0001830.

In this permitting action, GAC seeks authorization to combine the discharge of storm water and wastewater from two separate outfall pipes to one consolidated outfall structure. GAC proposes to eliminate Outfall #002A, as identified in WDL #W002530-5S-F-R, by redirecting the flow to the influent pipe associated with the treatment system at Outfall #001A as identified in WDL #W002530-5S-F-R. Due to the change in nature of the discharge from Outfall #001A following outfall consolidation, this permitting action is assigning a new outfall identifier of Outfall #004A to the structure referred to as Outfall #001A in the previous permitting action for data management purposes.

c. Source Description: GAC Chemical Corporation is located on a 152-acre parcel located off Kidder Road in Searsport, Maine. A map showing the location of the facility is included as Fact Sheet Attachment A. GAC manufactures industrial-grade chemicals including: 1) aluminum sulfate (alum) used by the paper manufacturing industry and by water and wastewater treatment facilities as a flocculant; 2) ammonium sulfate, which is an inorganic salt used in a variety of industries including the food industry, in the pharmaceutical industry, the textile industry for dyeing woolen and nylon fibers, the tanning industry to remove hair from hides dipped in alkaline baths, and the photographic industry as a precipitant or flocculating agent in the manufacturing of films and photosensitive papers; 3) sodium aluminate used as a flocculant; 4) aqueous ammonia used as a nutrient in wastewater treatment facilities and in industrial air scrubbers; and 5) sodium hypochlorite (bleach) used in the paper manufacturing industry and by water and wastewater treatment facilities. In addition, GAC 1) purchases sulfuric acid in bulk transported to the facility by railcars and distributes it to customers primarily by transfer to tank trucks; 2) oxidizes several different non-petroleum oils, such as fish oil and neats foot oil for use in the leather tanning industry; and 3) purchases a variety of other chemical products in bulk and either distributes them in the same formulation as purchased or blended and sold in different concentrations or forms for their use as flocculants, coagulants and defoamers.

Following consolidation of Outfall #001A and #002A, the sources of wastewater conveyed for discharge via Outfall #004A are water softening system backwash wastewater, steam condensate, non-contact cooling water, neutralized, demineralized water softening system backwash wastewater, neutralized boiler blowdown, and storm water runoff.

Water Softening System Backwash Wastewater

GAC utilizes municipal (potable) water in the ammonium sulfate, sodium aluminate, aqua ammonia, and liquid bleach manufacturing processes and to feed the industrial boiler system. The municipal water supply is demineralized using water softening systems to ensure quality assurance of the manufactured products. The water softening systems are similar to those used in domestic water treatment applications and use an ion exchange media to remove minerals from the municipal water supply. Periodically, the ion exchange media must be cleaned and regenerated through a backwash and brine injection process.

The ammonium sulfate production plant operates on an intermittent basis of once every three weeks; therefore, the generation of wastewater from this dedicated softening system is intermittent. GAC performs two backwash/regeneration cycles during each ammonium sulfate production cycle, which generates approximately 1,000 gallons of wastewater including approximately 150 gallons of brine solution. This process generates approximately 2,000 gallons of backwash wastewater per month.

The aluminum sulfate and sodium aluminate production plants operate continuously. GAC performs one backwash/regeneration cycle per month on each of two dedicated water softening systems, which generates approximately 1,000 gallons of wastewater including approximately 150 gallons of brine solution. These two processes generate approximately 2,000 gallons of backwash wastewater per month.

The aqua ammonia water softening system operates continuously. GAC performs one to two backwash/regeneration cycles per week, on average, for this dedicated water softening system and each cycle generates approximately 1,000 gallons of wastewater. This process generates up to approximately 8,000 gallons of backwash wastewater per month.

The liquid bleach production process operates continuously. GAC performs one backwash/regeneration cycle per week, on average, for this dedicated water softening system and each cycle generates approximately 1,000 gallons of wastewater, including 150 gallons of brine solution. This process generates approximately 4,000 gallons of backwash wastewater per month.

GAC stated that the purpose of using demineralized water for the boiler system is to minimize the generation of boiler blowdown. GAC performs two backwash/regeneration cycles per week for the boiler house water softening system during cold weather months and one cycle per week during warm weather months. Each backwash/regeneration cycle generates approximately 1,000 gallons of wastewater, including 150 gallons of brine solution. This process generates up to 8,000 gallons of backwash wastewater per month during the cold season and up to 4,000 gallons per month during the warm season.

Steam Condensate Wastewater

GAC generates an undetermined quantity of steam condensate wastewater from various sources in the ammonium sulfate, aluminum sulfate and sodium aluminate manufacturing plants.

Boiler Blowdown

GAC generates an undetermined quantity of wastewater from two discrete boiler blowdown processes. GAC performs a bottom blowdown process once per day to remove sediments from the bottom of the boiler, and a continuous surface blowdown process to maintain efficiency of the boiler.

Storm Water

GAC generates an undetermined quantity of storm water runoff from facility access roads, manufacturing buildings, office buildings, and material handling areas, including, but not limited to loading and unloading areas for raw and final products. Storm water is captured by catch basins located on facility grounds, and is commingled with the other sources of wastewater as described above. GAC maintains a current Storm Water Pollution Prevention Plan (SWPPP) to minimize storm water runoff to the extent practicable and to map and identify potential sources of storm water pollution from the industrial site.

Sanitary wastewater generated by GAC is conveyed to a subsurface wastewater disposal system in accordance with applicable State and local laws.

A schematic of the facility is included as Fact Sheet Attachment B.

d. Wastewater Treatment: Wastewater generated by GAC receives the following treatment:

Backwash wastewater from the aqua ammonia softening system is conveyed to a 1,000-gallon holding tank, and boiler blowdown wastewater is conveyed to a 500-gallon holding tank for treatment consisting of pH neutralization with sulfuric acid before these waste streams are commingled with the other sources of wastewater generated by the facility. Sediment that accumulates in the bottom of the holding tanks is removed one to two times per year for disposal at an approved landfill facility.

GAC utilizes an active pH adjustment system, installed between the shoreline of Stockton Harbor and the production facilities and operational since November 2001, to adjust pH prior to discharge. The treatment system is designed to increase the pH of the influent wastewater stream to 7.0 standard units through the controlled addition of caustic (sodium hydroxide) or reduce pH through the addition of acid at the head end of a baffled, concrete mixing/contact chamber. The chamber measures 18-feet long by 17-feet wide by 6-feet deep and also serves to mix the various sources of wastewater generated by the facility. A schematic of the mixing chamber is included as Fact Sheet Attachment C. GAC continuously monitors the influent pH to ensure proper dosing of caustic. Caustic is introduced in the first baffled section of the chamber and effluent pH is monitored in the last baffled section. A building constructed adjacent to the outfall structure houses the caustic supply, the injection pumps, the controllers, and an alternative power supply. Visual and audible alarms are located at the service building where personnel are stationed 24 hours per day, 7 days per week.

Final effluent is conveyed for discharge to the Atlantic Ocean at Stockton Harbor in Penobscot Bay via Outfall #004A. Outfall #004A measures 20-inches in diameter, extends out into the receiving waters approximately 150 linear feet and is submerged to a depth of approximately 4 feet below the water surface at mean low tide. The pipe is not fitted with a diffuser or other structure that would assist in mixing of the effluent with the receiving waters.

#ME0001830

On December 29, 2004, the Department issued WDL #W002530-5S-F-R to GAC and Special Condition I of the permit required the facility to prepare a toxicity reduction evaluation (TRE) plan based on the Department's determination that the discharge from Outfall #002A exceeded the critical chronic ambient water quality criteria for ammonia. GAC determined through this approach that consolidation of the discharges from Outfall #002A and Outfall #001A would eliminate the ammonia exceedences. Based on a letter from GAC to the Department's compliance inspector assigned to this facility, dated September 30, 2005, GAC has completed all work necessary to combine the flows previously conveyed via Outfall #002A (as identified in the previous permitting action) to Outfall #004A (identified as Outfall #001A in the previous permitting action). Upon issuance of this permit, GAC will permanently eliminate the discharge via Outfall #002A by redirecting the flows into an 8-inch diameter, subsurface PVC pipe that is connected to the influent pipe at the head end of the active pH treatment system associated with Outfall #004A. Immediately following issuance of this permit, GAC will seal Outfall #002A such that is no longer considered an active pipe physically or for purposes of Permit Compliance System (PCS) data management.

3. CONDITIONS OF PERMIT

Maine law, 38 M.R.S.A. §414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A. §420 and Department rule 06-096 CMR Chapter 530, Surface Water Toxics Control Program, require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, Surface Water Quality Criteria for Toxic Pollutants, and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS

Maine law 38 M.R.S.A. §469 classifies the Atlantic Ocean at the point of discharge as a Class SB waterbody. Maine law 38 M.R.S.A. §465-B(2) describes the standards for Class SB waters.

5. RECEIVING WATER QUALITY CONDITIONS

The State of Maine 2004 Integrated Water Quality Monitoring and Assessment Report, prepared pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists the marine waters at Searsport-Stockton Springs (Waterbody #722-24) as, "Category 5-B-1: Estuary and Marine Waters Impaired Only By Bacteria (TMDL Required)." The Report lists sources of the impairment as sewerage treatment plant discharges, overboard discharges, failing septic systems and non-point source pollution. The Department has not scheduled a total maximum daily load (TMDL) study for this segment of marine waters. After the Department has scheduled and completed a TMDL for this segment, the Department will identify sources contributing to the non-attainment status of the receiving waters and will allocate waste loads to point source dischargers as necessary.

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

The Department has no information at this time that the discharge from GAC causes or contributes to non-attainment of the standards of classification for Class SB waters.

The Maine Department of Marine Resources (DMR) assesses information on shellfish growing areas to ensure that shellfish harvested are safe for consumption. The DMR has authority to close shellfish harvesting areas wherever there is a pollution source, a potential pollution threat, or poor water quality. The DMR traditionally closes shellfish harvesting areas if there are known sources of discharges with unacceptable bacteria levels (instream thresholds established in the National Shellfish Sanitation Program) or maintains shellfish harvesting closure areas due to lack of updated information regarding ambient water quality conditions. In addition, the DMR prohibits shellfish harvesting in the immediate vicinity of all wastewater treatment outfall pipes as a precautionary measure in the event of a failure in the treatment plant's disinfection system. Thus, shellfish harvesting area #C33, identified on the map included as Fact Sheet Attachment A, is closed to the harvesting of shellfish due to the presence of wastewater outfall pipes and non-attainment of bacteria standards for Class SB waters. The Department has no information at this time that the discharge from GAC causes or contributes to elevated bacteria counts in the receiving waters.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

- a. Outfall Identification: In this permitting action, GAC seeks to eliminate the discharge from Outfall #002A by redirecting the flows to the influent pipe associated with the outfall structure identified as Outfall #001A in the previous permitting action. For purposes of effluent compliance data management and to acknowledge the change in nature of effluent discharged via the consolidated outfall, this permitting action is assigning a new outfall identifier of #004A to the pipe previously referred to as Outfall #001A.
- b. National Effluent Guideline Applicability: The previous permitting action stated that national effluent limitation guidelines (NEGs) promulgated by the USEPA for the aluminum sulfate production subcategory of inorganic chemical manufacturing point source category at 40 CFR Part 415, subpart B were applicable to the discharges from GAC, and established numeric effluent limitations based on this determination. In this permitting action, the Department acknowledges an error in the application of numeric effluent limitations. 40 CFR Part 415.20 states, "the provisions of this subpart are applicable to discharges and to the introduction of pollutants into treatment works that are publicly owned resulting from the production of aluminum sulfate." As provided in Section 2.c of this Fact Sheet, Source Description, a portion of the wastewater discharged by GAC results from the production of aluminum sulfate. Therefore, the NEG is applicable to the discharge from GAC. 40 CFR Part 415.22(a) states, "...there shall be no discharge of process wastewater pollutants into navigable waters." 40 CFR Part 415.22(d) provides numeric effluent limitations for TSS and pH for the discharge of wastewaters from a process wastewater impoundment. Wastewater generated by GAC does not consist of process wastewaters. Therefore, this permitting action correctly acknowledges that the NEG applies to this facility, but that the numeric effluent limitations do not apply to the discharge of non-process wastewaters from GAC. Thus, GAC satisfies all requirements of the effluent guidelines.

- c. <u>Discharge Flow</u>: The previous permitting action established monthly average discharge flow limits of 0.04 million gallons per day (MGD) for Outfall #001A and 0.02 MGD for Outfall #002A. This permitting action is establishing a monthly average discharge flow limitation of 0.124 MGD for Outfall #004A which is based on GAC's estimate of the 99th percentile of the distribution of average discharge flow measurements recorded for Outfall #001A and #002A during the period of January 2005 through October 2005. This permitting action is establishing a minimum monitoring frequency requirement of five times per week and "measured" sample type.
- d. <u>Dilution Factors:</u> Department rule, 06-096 CMR Chapter 530(4)(A)(2)(a), Surface Water Toxics Control Program, states that, "For discharges to the ocean, dilution must be calculated as nearfield or initial dilution, or that dilution available as the effluent plume rises from the point of discharge to its trapping level, at mean low water level and slack tide for the acute exposure analysis, and at mean tide for the chronic exposure analysis using appropriate models determined by the Department such as MERGE, CORMIX or another predictive model."

Based on the location and configuration of the outfall pipe and the permitted discharge flow limit of 0.124 MGD, the Department has determined that the dilution factors associated with the discharge from GAC are as follows:

Acute = 3:1

Chronic = 23:1

Harmonic $Mean^1 = 69:1$

e. Total Suspended Solids (TSS): The previous permitting action stated that national effluent limitation guidelines (NEGs) promulgated by the USEPA for the aluminum sulfate production subcategory of inorganic chemical manufacturing point source category at 40 CFR Part 415, subpart B were applicable to the discharges from GAC, and monthly average and daily maximum effluent limits for TSS were established on this basis. The Department acknowledged an error in this determination in Section 6(a) above. Neither the Department nor USEPA has developed effluent limitation guidelines or BPT standards for the discharge of industrial storm water runoff commingled with other wastewater sources. Therefore, this permitting action is revising the monthly average and daily maximum TSS limits of 25 mg/L and 50 mg/L, respectively, established in the previous permitting action.

This permitting action is establishing monthly average and daily maximum effluent TSS concentration limits of 50 mg/L and 100 mg/L, respectively, based on a Department best professional judgment determination of best practicable treatment for the discharge of suspended solids associated with storm water runoff from this industrial site. Compliance with the monthly average limit of 50 mg/L shall be based on a 12-month rolling average calculation in consideration of the variability of storm water runoff rates over the course of a calendar year. These limitations and the methodology for determining compliance are consistent with the limits

¹ The harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by three (3). This multiplying factor is based on guidelines for estimation of human health dilution presented in the U.S. EPA publication, "Technical Support Document for Water Quality-Based Toxics Control" (Office of Water; EPA/505/2-90-001, page 88), and represents an estimation of harmonic mean flow on which human health dilutions are based in a riverine 7Q10 flow situation.

established in permits issued by the Department for bulk fuel storage and transfer facilities located within the State and for other dischargers of storm water from industrial sites.

An example for calculating a 12-month rolling average is as follows:

Quarter #1	Test Result	Quarter #3	Test Result
Jan.	15 mg/L	Jul.	25 mg/L
	53 mg/L		72 mg/L
Feb.	31 mg/L	Aug.	55 mg/L
Mar	71 mg/L	Sep.	71 mg/L
	24 mg/L		22 mg/L
	37 mg/L		26 mg/L
Quarter #2		Quarter #4	
Apr.	50 mg/L	Oct.	50 mg/L
May	34 mg/L	Nov.	34 mg/L
	47 mg/L		47 mg/L
	39 mg/L		59 mg/L
Jun.	60 mg/L	Dec.	89 mg/L

12-Month rolling average =
$$\Sigma$$
 effluent concentrations = $\frac{1,011}{22}$ = 46 mg/L $\frac{1,011}{22}$

As stated in footnote #2 of Special Condition A, *Effluent Limitations and Monitoring Requirements*, of the permit, the 12-month averaging period is based on the most recent twelve month period of time.

The concentration limits established in this permitting action for Outfall #004A (the consolidated outfall) are less stringent than the limits established for Outfall #001A and #002A in the 12/29/04 permitting action. The Department has made a best professional judgment determination that the less stringent TSS limits associated with this permit modification will not cause or contribute to the failure of the receiving water to meet the standards of its designed classification and does not violate the State's antidegradation policy at 38 M.R.S.A. §464(4)(F).

This permitting action is establishing a TSS minimum monitoring frequency requirement of twice per month (2/Month) for Outfall #004A based on a Department best professional judgment determination of the minimum level of monitoring necessary to characterize the TSS content of the discharge and to evaluate compliance with the numeric limits.

f. Ammonia (as N): The previous permitting action established daily maximum and monthly average ammonia concentration and mass limits for Outfall #002A based on a November 23, 2004 statistical evaluation which indicated that the discharge during both the summer season and non-summer season exceeded the chronic ambient water quality criterion (AWQC) for ammonia. The previous permitting action established a daily maximum ammonia concentration reporting requirement for Outfall #001A to facilitate the collection of data with which to characterize the ammonia content in the effluent.

Acute and chronic water quality criteria for ammonia vary based on changes in temperature, salinity and pH. This permitting action utilizes the following assumptions regarding receiving water characteristics to determine applicable acute and chronic AWQC for ammonia.

Temperature = 20 °C

Salinity = 30 parts per thousand

pH = 8.0 SU

This results in critical acute and chronic AWQC of 7.3 mg/L and 1.1 mg/L, respectively.

Department rule Chapter 530 Section 4.C. requires that the background concentration of specific chemicals must be included in all calculations based on a published list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations. The Department has not published site-specific background copper or arsenic values for the receiving water, the Atlantic Ocean at Stockton Harbor. Therefore, this permitting action assumes the default 10% of applicable AWQC in calculating effluent limitations for ammonia, which is illustrated in the calculations below. Additionally, Department rule Chapter 530 Section 4.E. requires the Department to hold a portion of the total assimilative capacity for toxic pollutants in an unallocated reserve to allow for new or changed discharges and non-point source contributions. The water quality reserve must not be less than 15% of the total assimilative quantity. The Department has not assigned specific allocations for dischargers to Stockton Harbor. Therefore, this permitting action reserves the default value of 15% of the total assimilative capacity in calculating effluent limitations for ammonia, which is illustrated in the calculations below.

Ammonia (as N)

End-of-pipe (EOP), water quality-based, monthly average and daily maximum concentration and mass limits for ammonia may be calculated as follows:

EOP Concentration Threshold = (Dilution Factor)[(0.75)(criterion)] + (0.25)(criterion)

EOP Chronic Concentration Threshold = (23)[(0.75)(1.1 mg/L)] + (0.25)(1.1 mg/L) = 19.3 mg/LEOP Acute Concentration Threshold = (3)[(0.75)(7.3 mg/L)] + (0.25)(7.3 mg/L) = 18.3 mg/L

EOP Ammonia Mass Limit = (EOP Conc. Threshold)(8.34 lbs./gallon)(discharge flow limit, MGD)

Monthly Avg. EOP Ammonia Mass Limit = (19.3 mg/L)(8.34 lbs./gallon)(0.124MGD) = 20.0 lbs./day Daily Max. EOP Ammonia Mass Limit = (18.3 mg/L)(8.34 lbs./gallon)(0.124MGD) = 18.9 lbs./day

Department rule Chapter 530.3.D(1) states, "for specific chemicals, effluent limits must be expressed in total quantity that may be discharged and in effluent concentration. In establishing concentration, the Department may increase allowable values to reflect actual flows that are lower than permitted flows and/or provide opportunities for flow reductions and pollution prevention provided water quality criteria are not exceeded." As not to penalize the permittee for operating at flows less than the permitted flow, the Department is establishing concentration limits based on a factor of 1.5. Therefore, the monthly average arsenic concentration limit may be calculated as follows.

EOP Ammonia Concentration Limit = (EOP Concentration Threshold)(1.5)

Monthly Average EOP Ammonia Concentration Limit = (19.3 mg/L)(1.5) = 29.0 mg/LDaily Maximum EOP Ammonia Concentration Limit = (18.3 mg/L)(1.5) = 27.5 mg/L

It is noted that the monthly average concentration and mass limits are <u>higher</u> (less stringent) than the daily maximum limits as a result of the relatively small difference in the applicable acute (7.3 mg/L) and chronic (1.1 mg/L) water quality criteria for ammonia.

This permitting action is establishing a minimum monitoring frequency requirement of twice per month (2/Month) based on a Department best professional judgment determination of the minimum level of monitoring necessary to characterize the ammonia content of the discharge and to evaluate compliance with the numeric limits.

- g. Temperature: The previous permitting action established a daily maximum temperature limit of 85 degrees Fahrenheit (°F), which is representative of the thermal characteristics of the discharge and was established to prevent adverse thermal impacts on marine life surrounding the outfall pipes. This permitting action is carrying forward the daily maximum temperature limit of 85 °F for Outfall #004A and the minimum monitoring frequency requirement of once per month (1/Month) based on a Department best professional judgment determination of the minimum level of monitoring necessary to evaluate compliance with this limit.
- h. <u>pH:</u> The previous permitting action established a pH range limit of 6.0 8.5 standard units (SU) based the limit established in the previous license, which is more stringent than the pH range limitations promulgated at 40 CFR Part 415.22(d). As stated in Section 6(a) above, the national effluent guideline limitations at 40 CFR Part 415.22(d) are not applicable to the discharge from GAC. Neither the Department nor USEPA has developed effluent limitation guidelines or best practicable treatment (BPT) standards for the discharge of industrial storm water runoff commingled with other wastewater sources. This permitting action is establishing a pH range limitation of 6.0 9.0 SU based on a Department best professional judgment determination of best practicable treatment for this discharge. This permitting action is carrying forward the minimum monitoring frequency requirement of three times per day for Outfall #004A.
- i. Whole Effluent Toxicity (WET), Priority Pollutant, and Analytical Chemistry Testing: Maine law, 38 M.R.S.A. §414-A and §420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department rule 06-096 CMR Chapter 530, Surface Water Toxics Control Program (toxics rule) sets forth effluent monitoring requirements and procedures to establish safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected and narrative and numeric water quality criteria are met. Department rule 06-096 CMR Chapter 584, Surface Water Quality Criteria for Toxic Pollutants, sets forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

Chapter 530 Section (2)(A) specifies the dischargers subject to the rule as, "all licensed dischargers of industrial process wastewater or domestic wastes discharging to surface waters of the State must meet the testing requirements of this section. Dischargers of other types of wastewater are subject to this subsection when and if the Department determines that toxicity of effluents may have reasonable potential to cause or contribute to exceedences of narrative or numerical water quality criteria." GAC is not authorized to discharge industrial process wastewater or domestic wastes. However, the Department is regulating specific pollutants (ammonia) known to be present in the discharge at levels that approach water quality based thresholds. The Department has no information at this time that other pollutants present in the discharge from GAC have a reasonable potential to cause or contribute to exceedences of narrative or numerical water quality criteria. Therefore, this permitting action is not establishing WET, priority pollutant or analytical chemistry testing at this time. In accordance with Special Condition I of this permit, the Department reserves the right to reopen this permit at any time and

with notice to the permittee to establish toxics testing requirements pursuant to Chapter 530 based on new information regarding the sources or characterization of wastewater discharged via Outfall #004A.

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the Atlantic Ocean to meet standards for Class SB classification.

8. PUBLIC COMMENTS

Public notice of this application was made in the <u>Republican Journal</u> newspaper on or about <u>October 13, 2005</u>. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

9. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from, and written comments sent to:

William F. Hinkel
Division of Water Quality Management
Bureau of Land & Water Quality
Department of Environmental Protection
17 State House Station

Augusta, Maine 04333-0017 Telephone: (207) 287-7659 Fax: (207) 287-7826

e-mail: bill.hinkel@maine.gov

10. RESPONSE TO COMMENTS

During the period of February 16, 2006 through March 16, 2006, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to GAC Chemical Corporation for the proposed discharge. The Department received no significant comments on the proposed draft permit; therefore, a response to comments was not prepared.

ATTACHMENT A

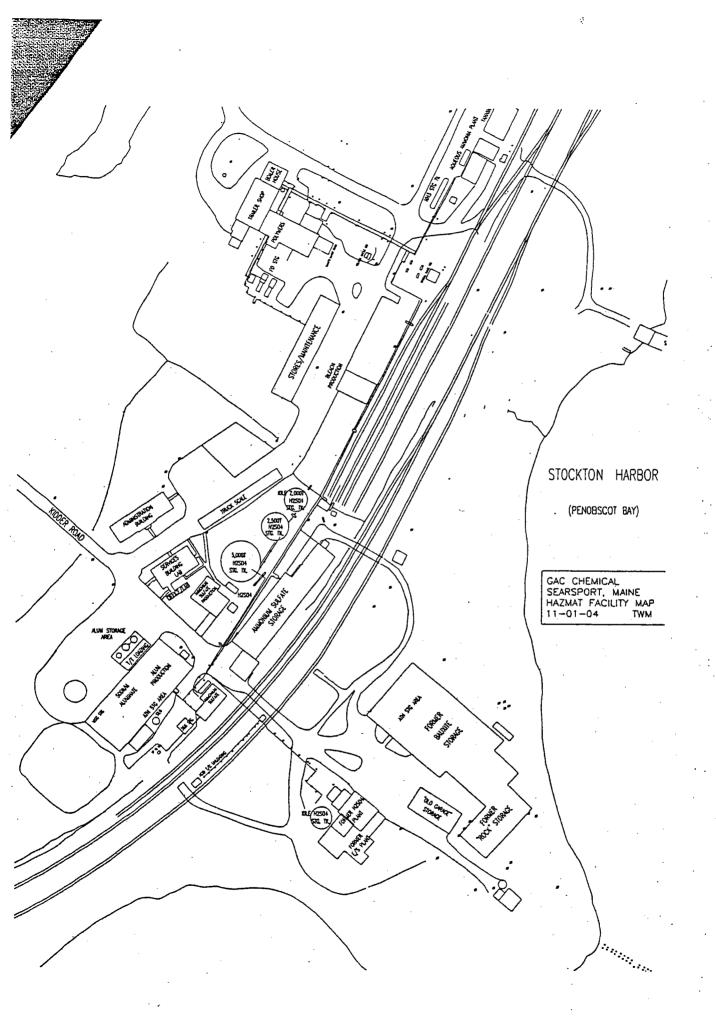




Map created Maine DEP December 8, 2005 - Revised March 14, 2006

Searsport, Maine

ATTACHMENT B



3/2

ATTACHMENT C

